

A SURVEY OF SOME REMNANTS OF THE NATIVE
FLORA OF WEST-CENTRAL ILLINOIS

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ABSTRACT: Twenty-three areas exemplifying some of the best remnants of the original vegetation of McDonough County, Illinois are listed as a result of a survey made during the 1984 growing season. For each area is given the location, kind of vegetation remnants, some characteristic plants and available literature citations.

Introduction

This paper lists 23 representative areas exemplifying some of the best examples of remnants of the original (natural) vegetation of McDonough County, Illinois made during a survey in 1984. The purpose of doing this is to identify areas that illustrate the biological and genetic diversity of west-central Illinois, to aid in establishing the status of local natural communities, to provide a baseline for future comparisons in a changing environment, and to list areas where our citizens can obtain a glimpse of their natural heritage. Only five of these areas are in public ownership and thus have some protection; hopefully means can be found to protect the others in private ownership. None of these areas have been undisturbed. There are no Illinois Nature Preserves in McDonough County but there are four areas (Good Hope Marsh, Argyle Lake Sphagnum Seep, Lake Argyle Barren, Daniels Marsh) that are on the Illinois Natural Areas Inventory and they are included in this list.

McDonough County is in the Galesburg Section of the Western Forest-Prairie Natural Division of Illinois (Schwegman 1973). The vegetation of the county has been summarized by Myers and Wright 1948 and various aspects of the flora by Myers 1972 (general), Myers and Henry 1979 (aliens), Myers and Henry 1976 (native plants), Henry and Scott 1982 (checklist of the vascular plants) and Henry 1983 a & b (weeds).

Whereas originally the vegetation of McDonough County was about 45% forest (the southwestern half) and 55% prairie (the northeastern half) today the prairie has essentially disappeared (primarily due to agriculture), the forest reduced to about 8% and about 16% of the native species are extinct (Myers and Henry 1976). The negative attitude of the early settlers toward the native forests which would hasten their destruction is clearly expressed by a testimonial plaque present today on a corner post of a neglected cemetery in Bethel Township: "Erected in honor of the pioneers

who cleared away the forests and destroyed the abiding places of the wild beasts so that civilization might occupy the ground." The remaining vestiges of the prairies are principally along the railroad right-of-ways and cemeteries. There were no good quality cemetery remnants found during this survey mainly due to a high level of maintenance and the railroad right-of-ways are in various degrees of disturbance which can vary yearly depending on the kinds of and intensity of maintenance; however, in some cases some brush and vegetation control maintenance may enhance prairie vegetation. Like the prairie remnants there are also probably no undisturbed forest remnants. The earliest settlers cut trees for firewood and lumber and today there are few that are not likewise cut (there is an increased amount of firewood cutting to reduce high energy costs) or grazed. Current strip mining operations in southwestern McDonough County particularly have been detrimental to the remaining forests there. The best and major forest remnants are along the valley's of the Lamoine River (some of the best examples being from about several miles east of Colchester to several miles west of Tennessee) and the lower courses of Camp and Grindstone Creeks.

The object of this paper is to call attention to these better representative areas and a few of their indicator plants so as to present the "flavor" of the areas to the interested reader or visitor. There is no intention of providing a complete list of the species present; in fact most of the areas have not been completely studied or inventoried although they should be as well as being continually monitored. In some of them today plants that were observed in the past have not been seen as for example in No. 13 Railroad Prairie West of Macomb (Myers Prairie) where Habenaria leucophaea, Baptisia leucophaea and others found by Dr. Myers in the past were not observed in a rather recent survey (Reese 1979, p. 15). The nomenclature used follows Mohlenbrock (1975). References concerning each area, if any, are also included.

List of Areas

1. Bushnell Swamp--An excellent wet prairie located about 2½ miles north of Bushnell near the north side of the sharp curve of state highway 9. Due to cultivation there are now only a couple acres left of a once extensive area. Melanthium, Spartina, Calamagrostis, Acorus, Salix, Typha, Asclepias, Epilobium, Mimulus, Gentiana andrewsii. In danger of being drained for cultivation.
2. Daniels Marsh (Gumbart Pond)--A remnant of a natural lake occurring in a wet prairie about one mile east of Colmar in Lamoine Township. This shallow water pond covered extensively with Typha remains today due to a dike constructed in 1956 to provide the owner with fishing and waterfowl hunting. The wet prairie and rest of the lake were drained for cultivation and also today some oil wells are present. Typha, Sparganium,

- Alisma, Sagittaria, Leersia, Scirpus, Lemna, Salix, Populus, Ranunculus flabellaris, Cephalanthus, Polygonum, Potamogeton foliosus. There is a spring near the northern edge. (Myers and Wright 1948, p. 46, Coon, Guilinger and Martin 1984, Illinois Department of Conservation 1978.--For Illinois Natural Areas Inventory Area No. 171--Daniels Marsh)
3. Good Hope Marsh--This marsh located three miles east of Good Hope adjacent to county road 1500 E borders on Short Fork into which the spring water that flows through it drains. Saxifraga pennsylvanica, Gentiana andrewsii, Aster umbellatus, Carex sterilis, Onoclea, Pedicularis, Chelone, Campanula parviflora, Caltha. (Henry and Scott 1984, Illinois Department of Conservation 1978.--For Illinois Natural Areas Inventory Area No. 144--Good Hope Marsh.)
 4. Argyle Lake Sphagnum Seep--This acid hillside coal seep dominated by the moss Sphagnum is located in the southwestern part of Argyle Lake State Park north of Colchester. Contains a state record Sphagnum fimbriatum. Peripheral canopy trees include Acer, Quercus, Carya, Ulmus, Fraxinus. (Henry and Scott 1984, O'Flaherty et al. 1975, Illinois Department of Conservation 1978.--For Illinois Natural Areas Inventory Area No. 172--Sphagnum Seep.)
 5. Spring Lake Seep--This hillside marsh is located about four miles northwest of Macomb in the northeastern part of Spring Lake Park. Juglans cinerea, Carex laevivaginata, Phalaris, Impatiens, Caltha, Chelone, Pedicularis, Aster puniceus, Solidago patula, Galium tinctorium. (Henry and Scott 1984.)
 6. Marthas Swamp--This wetland occurs along the south edge of Keppel Creek principally in Sections 20 and 21 of Mound Township for about one and three-fourths miles starting at about one mile east of Bardolph. The least disturbed and best developed area is in the eastern part of Section 21. It has a varied flora including Polygonum sagittatum, Acorus, Bidens, Epilobium, Mentha, Amorpha, Sambucus, Onoclea, Chelone, Thelypteris, Aster novae-angliae, Pedicularis, Ludwigia, Penthorum, Typha, Scirpus, Glyceria, Carex, Eleocharis, Sagittaria, Alisma, Oenothera pilosella, Iris shrevei. Parts of this area are grazed and trampled by livestock.
 7. Railroad Prairie North of Adair--Located at Burlington-Northern railroad miles 151-152 north of Adair this wet-mesic prairie is dominated by Spartina, Silphium terebinthinaceum and laciniatum, Ratibida, Heliopsis, Helianthus grosseserratus, Monarda, Euphorbia corollata, Elymus, Veronicastrum, Aster ericoides.
 8. Railroad Prairie South of Adair--Located at Burlington-

Northern railroad miles 147-150 south of Adair this wet-mesic prairie is a continuation of, and therefore similar to, that on miles 151-152 north of Adair. In addition to plants listed for miles 151-152 are also noticeably present Andropogon gerardii (dominant), Panicum virgatum, Solidago rigida, Sorghastrum nutans, Asclepias verticillata, Helianthus hirsutus, Vernonia, Desmodium, Echinacea.

9. Railroad Prairie at New Philadelphia--This wet-mesic prairie is located at Santa Fe (nee T.P. & W.) railroad mile 166 at the west edge of New Philadelphia. Asclepias tuberosa, Silphium terebinthinaceum, Spartina, Tragopogon, Tradescantia, Euphorbia corollata, Eleocharis, Carex, Scirpus, Andropogon gerardii, Helianthus grosseserratus, Sorghastrum nutans, Polygonum. A large part of this was mowed in the fall of 1984.
10. Railroad Prairie South of Bushnell--This excellent wet-mesic prairie with a large species diversity is located about two miles south of Bushnell principally between Burlington-Northern railroad miles 193-194. Heliopsis, Ratibida, Silphium terebinthinaceum, laciniatum and perfoliatum, Asclepias, Spartina, Desmanthus, Echinacea, Phragmites, Tradescantia, Andropogon gerardii, Panicum virgatum, Helianthus grosseserratus, Sporobolus asper, Aster novae-angliae, ericoides and praealtus, Solidago graminifolia and canadensis. (Reese 1979, p. 16.)
11. Railroad Prairie North of Bushnell--Located about two miles north of Bushnell at Burlington-Northern railroad miles 189-189.5. This is a good tall grass prairie but unfortunately during the summer of 1984 it was subject to extreme abuse by railroad crews spraying, mowing and driving through it. The dominant species are Silphium laciniatum and Andropogon gerardii. Also noticeable were Petalostemum purpureum, Helianthus grosseserratus, hirsutus and rigidus, Ratibida, Echinacea, Elymus, Euphorbia corollata, Silphium integrifolium, Desmodium, Asclepias, Tradescantia, Heliopsis, Anemone cylindrica, Coreopsis tripteris, Panicum virgatum, Stipa.
12. Railroad Prairie West of Bushnell--This excellent tall grass prairie is one of the best remnants left and is located at Santa Fe (nee T.P. & W.) railroad mile 172-173 about two miles west of Bushnell. Although there is a high species diversity Silphium terebinthinaceum was not observed. There are several low areas in which wet prairie plants as Spartina, Calamagrostis, and Iris are present. Andropogon gerardii, Sorghastrum, Solidago rigida and graminifolia, Heuchera, Tradescantia, Tragopogon, Lithospermum, Eryngium, Monarda, Echinacea, Petalostemum, Euphorbia corollata, Silphium laciniatum and integrifolium, Helianthus grosseserratus,

- hirsutus and rigidus, Lespedeza capitata, Ratibida, Asclepias, Melanthium, Liatris, Rudbeckia, Coreopsis, Veronicastrum, Lilium michiganense, Cacalia tuberosa, Aster ericoides, Elymus, Brickellia, Crotalaria, Stipa (Reese 1979, p. 15).
13. Railroad Prairie West of Macomb (Myers Prairie)--This excellent tall grass prairie is also one of the best remnants remaining and is located about two miles west of Macomb at Burlington-Northern railroad miles 204-207 the best being mile 205-206. There has been much deterioration of this prairie since it was first observed by Dr. R. M. Myers in 1947 being particularly accelerated in recent years by the railroad spraying, cutting and driving on it. It is becoming increasingly weedy with such aliens as Melilotus and Pastinaca. Some low areas have wet prairie genera as Calamagrostis, Spartina and Scirpus. Lithospermum, Aster ericoides, Cacalia, Coreopsis, Echinacea, Asclepias, Helianthus grosseserratus and rigidus, Parthenium, Prenanthes, Ratibida, Rudbeckia, Silphium terebinthinaceum, laciniatum and integrifolium, Solidago rigida, Vernonia, Euphorbia corollata, Gentiana andrewsii, Monarda, Heuchera, Veronicastrum, Eryngium, Andropogon gerardii, Schizachyrium scoparium, Elymus, Panicum virgatum, Sorghastrum. (Myers 1972, p. 58, Myers 1982, Reese 1979, p. 15, Myers and Wright 1948, p. 47.)
14. Railroad Prairie North of Colmar--Located at Burlington-Northern railroad miles 212-213 and 216-217 north of Colmar this tall grass prairie is dominated by Andropogon gerardii and Sorghastrum. At mile 216.5 south of the highway-railroad crossing, particularly on the west side is an excellent stand of the two grasses due in part to the mowing pattern. No Silphium terebinthinaceum or laciniatum was observed although there is a good variety of herbs. This area is sprayed, mowed and cut by the railroad and also is becoming weedy in places. Lespedeza capitata, Solidago rigida, graminifolia, nemoralis and missouriensis, Aster ericoides and praealtus, Silphium integrifolium, Veronicastrum, Coreopsis tripteris and palmata, Parthenium, Helianthus grosseserratus, Dodecatheon meadia (mile 216), Rudbeckia, Ratibida pinnata, Tradescantia, Pycnanthemum, Liatris, Euphorbia corollata, Monarda, Echinacea, Desmodium, Elymus, Panicum virgatum, Sporobolus asper, Eupatorium altissimum. In several low areas are found Spartina, Silphium perfoliatum, Phragmites (mile 214), Tripsacum (mile 217) and Aster novae-angliae.
15. Woodside Prairie--This superb short-grass prairie is located on a slope on the south side of Grindstone Creek west of where it crosses highway 900E in Section 28 of Bethel Township. Dominated by a very dense stand of chest high Schizachyrium

scoparium this approximately ten acre prairie has been inadvertently maintained by an annual spring burning by the owner who wants to "control the weeds" on this area. The area has not been cultivated due to the gravelly and rocky soil and its proneness for erosion. There has been occasional (particularly in the past) grazing of this area. Aster ericoides, Prenanthes, Lespedeza capitata, Solidago missouriensis and nemoralis, Euphorbia corollata, Vernonia, Monarda, Rudbeckia subtomentosa, Aristida, Pycnanthemum pilosum, Liatris, Cassia, Ambrosia bidentata, Desmodium. The northeast edge is low and wet and at the bottom is a nice small zone of Andropogon gerardii, Helianthus grosseserratus and hirsutus, Typha, Gentiana andrewsii (including several f. albiflora), Silphium perfoliatum, Bidens and Aster novae-angliae. There are some Quercus macrocarpa at the eastern border by the road. Upslope adjacent to the big bluestem is a narrow zone of Sorghastrum nutans. The more southeastern end of this prairie is being seriously invaded by Populus alba.

16. Lake Argyle Barren--This small dry-mesic barren on the top of sandstone-shale is located above the lake near the north-eastern part of Argyle Lake State Park north of Colchester. Hypoxis, Viola pedata, Antennaria, Penstemon, Comandra, Gerardia grandiflora and tenuifolia, Lobelia spicata, Amorpha canescens, Juncus, Erigeron strigosus, Carex, Tradescantia, Aristida, Pycnanthemum, Rosa carolina, Polygala, Cassia, Asclepias verticillata, Liatris, Aster turbinellus and anomalus, Hieracium scabrum, Agrostis perennans, Solidago nemoralis, Schizachyrium scoparium, Scleria triglomerata, Danthonia, Bidens, various mosses and lichens. The surrounding forest includes Quercus alba and rubra, Carya, Acer saccharum, Juglans nigra, Amelanchier arborea, Ostrya. (Illinois Department of Conservation 1978.--For Illinois Natural Areas Inventory Area No. 145--Lake Argyle Barren.)
17. Pleasant Valley--This excellent area bordering on the Lamoine River is located west of county highway 500 E in Section 11 of Colchester Township about one mile southwest of Argyle Lake State Park. A spectacular bluff with a barren on top contrasts with the lowland-mesic forest which extends from the bluff to the river. The upland oak-hickory forest surrounding the barren includes Quercus marilandica, Q. velutina, Q. alba, Q. rubra, Carya ovata, Rhus glabra and Fraxinus. The mesic forest includes Aesculus, Cercis, Asimina, Juglans, Acer, Tilia, Platanus, Ulmus, Quercus muhlenbergii, Q. alba, Q. rubra, Q. imbricaria, Ostrya, Fraxinus, Juniperus, Viburnum rafinesquianum, Euonymus, Amelanchier, Sanguinaria, Smilacina, Phlox, Arisaema, Trillium, Equisetum and Aquilegia. On the bluff are found Aruncus, Potentilla simplex, Silene antirrhina, Carex, Myosotis, Asplenium rhizophyllum, Hedeoma,

- Lonicera, Dryopteris marginalis and mosses. The dry prairie barren on top of the bluff includes Baptisia, Lithospermum, Viola pedata, Penstemon, Echinacea, Coreopsis palmata, Parthenium, Gerardia grandiflora, Amorpha canescens, Juncus, Erigeron strigosus, Carex, Rosa carolina, Euphorbia corollata, Tephrosia, Plantago aristata, Aristida, Silene antirrhina, Danthonia, Ruellia, Pycnanthemum, Polygala, Linum sulcatum, Petalostemum candidum, Asclepias verticillata, Liatris asper, L. cylindracea, Aster turbinellus, A. anomalus, Eupatorium, Solidago nemoralis, Andropogon gerardii, Schizachyrium scoparium, Brickellia, Antennaria, mosses and lichens.
18. Lamoine River Valley North of Tennessee--This area is located principally on the south and west side of county road 350 E where the Lamoine River crosses it about one mile north of Tennessee. The herbaceous flora of the rocky mesic slope is excellent although many larger trees of the slope and the upland oak-hickory forest above it have been cut. The lowland forest is a good representative one of this area. Plants of the lowland include Platanus, Ulmus, Juglans nigra and cinerea, Urtica, Laportea, Acer saccharinum and negundo, Populus, Aesculus, Silphium perfoliatum, Glyceria, Impatiens, Vitis, Pilea, Salix, Gymnocladus, Asimina, Carpinus, Solidago gigantea, Rudbeckia laciniata, Cinna and Sambucus. Plants of the mesic slope include Hepatica, Sanguinaria, Claytonia, Dentaria, Dicentra cucullaria and the only known county location of D. canadensis, Erythronium albidum and the only known county location of E. americanum, Podophyllum, Viola, Asarum, Geranium, Trillium recurvatum and nivale, Equisetum, Cystopteris, Ranunculus, Mertensia, Chaerophyllum, Carpinus, Acer saccharum, Tilia, Ostrya, Quercus rubra, alba and muhlenbergii, Carya, Osmorhiza, Phlox, Sanicula, Arisaema, Fraxinus, Hydrophyllum, Carex, Smilacina, Ulmus, Aesculus, Juglans, Blephilia, Campanula, Desmodium, Phryma, Geum, Adiantum, Eupatorium, Solidago ulmifolia, Aster lateriflorus and sagittifolius.
19. Camp Creek Valley--This area of representative lowland, mesic slope and upland oak-hickory forest is located along Camp Creek in parts of Sections 19, 20, 21 and 16 in Bethel Township. In Section 19 is an excellent lowland with a mature stand of large Gymnocladus and Carya cordiformis. Also present here are Quercus macrocarpa, Ulmus, Acer saccharum, Impatiens, Laportea, Carex, Fraxinus, Podophyllum, Sanicula, Celtis, Tilia, Juglans, Cercis, Glyceria as well as the only known county location of Viola striata. Unfortunately this area is grazed. In the other sections the lowland woods include Acer saccharinum and negundo, Ulmus, Juglans, Platanus, Laportea and other characteristic species. The mesic woods on the slopes include Hepatica, Hydrophyllum,

Cystopteris fragilis and bulbifera, Asarum, Acer saccharum, Ostrya, Tilia, Aesculus, Carpinus, Celtis, Cercis, Asplenium rhizophyllum, Adiantum, Aquilegia, Sanguinaria, Uvularia, and on sandstone in one location Polypodium vulgare var. virginianum. On top of the bluffs are characteristic upland oak-hickory forests at times with barrens developed to various degrees at the edge. These include Coreopsis palmata, Antennaria, Gillenia, Viola pedata, moss, lichens, Baptisia leucophaea, Hypoxis, Fraxinus, Quercus alba, velutina, rubra and imbricaria, Carya, Ostrya, Lithospermum, Aster recurvatus and turbinellus, Hieracium scabrum and Calystegia spithamea.

20. Ferster Woods--This 30 acre mesic woods owned by Western Illinois University is located about six miles northeast of Macomb in Section 23 of Macomb Township. The area has been logged in the past removing many of the larger trees but with its present protection is recovering. The herbaceous flora is good and is notable for an extensive coverage of the Illinois threatened species Hydrastis canadensis its only known location in the county. Also the threatened species Panax quinquefolius is present. Allium tricoccum var. burdickii, Brachyelytrum erectum and Caulophyllum thalictroides are also known only from here in the county. Characteristic plants are Carya ovata and cordiformis, Quercus alba and rubra, Tilia, Ulmus, Juglans, Celtis, Prunus, Corylus, Xanthoxylum, Dicentra, Claytonia, Dentaria, Mertensia, Podophyllum, Erythronium, Osmorhiza, Polemonium, Phlox, Viola, Hydrophyllum, Cacalia, Aster, Solidago, Tradescantia virginiana and Onoclea (Henry and Scott 1985).
21. Argyle Lake Forest--Located in Argyle Lake State Park about one mile north of Colchester, (Murphy 1951, Myers 1972, p. 57-58, Myers and Wright 1948, p. 47-48)
22. Vishnu Springs and Cutler-Kennedy Forest--These two areas are located adjacent to each other in the eastern half of Section 7 in Tennessee Township.
23. Beverage Forest--Located in the southwestern quarter of Section 27 in Bethel Township and traversed by Grindstone Creek.

These three forests are primarily cited here as oak-hickory upland forest sites although at lower elevations and along wetland areas mesic and lowland species as Acer saccharum and saccharinum, Tilia, Ulmus, Fraxinus, Salix, Juglans, Aesculus, Platanus, Populus, Betula and Celtis occur in varying amounts including Quercus macrocarpa and Populus grandidentata at Beverage Forest. The dominant upland forest plants that are representative are Quercus alba, velutina, rubra and

imbricaria and Carya ovata. Sassafras, Cercis, Prunus serotina, Ostrya and sometimes Amelanchier are common understory trees. The herbaceous flora (including ferns) is generally characteristic and well developed. The sandstone rimmed ravines at Vishu Springs are excellent and Polypodium vulgare var. virginianum a rare plant in west-central Illinois occurs there.

References

- Coon, R., N. Guilinger and C. Martin. 1984 (Reprint of a 1964 report). An Analysis of the Aquatic Plant Communities of a Wetland Habitat in McDonough County, Illinois. The R. M. Myers and A. L. Kibbe Herbarium Circular No. 14. Western Illinois University, Macomb.
- Henry, R. D. 1983a. Checklist of the Weeds of the Spontaneous McDonough County, Illinois Vascular Plant Flora. The R. M. Myers and A. L. Kibbe Herbarium Circular No. 9. Western Illinois University, Macomb.
- Henry, R. D. 1983b. Aspects of the Weed Component of the Spontaneous Vascular Flora of McDonough County, Illinois. *Phytologia* 53(6):423-428.
- Henry, R. D. and A. R. Scott. 1982. Checklist of the Vascular Plants of McDonough County, Illinois. The R. M. Myers and A. L. Kibbe Herbarium Circular No. 6. Western Illinois University, Macomb.
- Henry, R. D. and A. R. Scott. 1984. The Wetland Vascular Flora of Four Seeps in McDonough County, Illinois. *Phytologia* 56(1):1-15.
- Henry, R. D. and A. R. Scott. 1985. Preliminary Checklist of the Vascular Plants of Ferster Woods, West-Central Illinois. *Phytologia* 57:65-72.
- Illinois Department of Conservation. 1978. Illinois Natural Areas Inventory Reports. Springfield.
- Mohlenbrock, R. H. 1975. Guide to the Vascular Flora of Illinois. Southern Illinois University Press, Carbondale.
- Murphy, P. C. 1951. A Phytosociological Study of an Oak-Hickory Woods in West-Central Illinois (McDonough County). Unpublished Master's Thesis. Western Illinois University, Macomb.
- Myers, R. M. 1972. Annotated Catalog and Index for the Illinois Flora. Western Illinois University Series in the Biological Sciences No. 10. Macomb.

- Myers, R. M. 1982 (Reprint of a 1975 mimeograph). Checklist of the Flowering Plants of a Tall Grass Prairie West of Macomb, McDonough County, Illinois. The R. M. Myers and A. L. Kibbe Herbarium Circular No. 4. Western Illinois University, Macomb.
- Myers, R. M. and R. D. Henry. 1976. Some Changes that have Occurred in the Indigenous Flora of two Adjoining West-Central Illinois Counties (Hancock and McDonough) During the Last 140 Years. Trans. Ill. State Acad. Sci. 69(1):19-36.
- Myers, R. M. and R. D. Henry. 1979. Changes in the Alien Flora in Two West-Central Illinois Counties During the Past 140 Years. Amer. Midl. Nat. 101(1):226-230.
- Myers, R. M. and P. G. Wright. 1948. Initial Report on the Vegetation of McDonough County, Illinois. Trans. Ill. State Acad. Sci. 41:43-48.
- O'Flaherty, L. M., J. D. Ives and A. R. Ozimek. 1975. Sphagnum fimbriatum New to Illinois. The Bryologist 78(4):455-458.
- Reese, M. C. 1979. A Floristic Study of the Railroad Rights-of-Way of McDonough County, Illinois. Unpublished Master's Thesis. Western Illinois University, Macomb.
- Schwegman, J. E. 1973. The Natural Divisions of Illinois. Ill. Nature Preserves Commission. Rockford, Illinois.

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